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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,848	07/25/2003	Hans-Heinrich Welschof	GKNG 1177 PUS	2640

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EXAMINER	
BINDA, GREGORY JOHN	

ART UNIT	PAPER NUMBER
3679	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/627,848	WELSCHOF, HANS-HEINRICH	
	Examiner	Art Unit	
	Greg Binda	3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *3,7-11 and 20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6 and 12-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20030725*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election without traverse of Group I, Species I (the longitudinal displacement unit shown in Fig. 2) in the reply filed on August 24, 2004 is acknowledged.

2. Claims 3, 7-11 & 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 24, 2004.

Information Disclosure Statement

3. The information disclosure statement filed July 25, 2003 fails to comply with:

a. 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. No copy of the reference identified as DE 1 800 996 was provided.

b. 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. No explanation of relevance of the reference identified as DE 1 800 996 was provided.

Drawings

4. The drawings are objected to as failing to comply with:

a. 37 CFR 1.83(a) because the drawings fail to show the features corresponding to the limitations of claims 5 & 16.

b. 37 CFR 1.84(h)(3) because:

i. The cross hatching patterns used for the elements 34, 41 & 42 are inappropriate. See MPEP § 608.02 for the appropriate pattern.

ii. The elastic material rolling members 32 & 33 are depicted without appropriate cross hatching. See MPEP § 608.02 for the appropriate pattern.

c. 37 CFR 1.84(p)(4) because reference character "31" has been used to designate balls (page 7, lines 11+), pairs of ball grooves (page 8, line 15) and each hole (page 10, line 3).

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The specification is objected to as failing to comply with 37 CFR 1.71 and 1.75(d)(1) because the detailed description of the elected species fails to provide proper antecedent basis for the following claimed subject matter:

a. Claim 1, line 13 and claim 4, line 16: "free from circumferential forces"

b. Claims 5, 13, 14 & 19: all limitations therein

Claim Objections

7. Claim 17 is objected to because in line 1, the word "least" is misspelled.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 4-6 & 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Welschof, US 5,026,325. Figs. 1 & 2 show a longitudinal displacement unit for a torque transmitting shaft assembly comprising: a profiled sleeve member 101 with circumferentially distributed longitudinally extending first ball grooves 117; a profiled journal 102 with circumferentially distributed longitudinally extending second ball grooves 118; torque-transmitting balls 103 which are arranged as groups in pairs of first and second ball grooves; a

ball cage 104 positioned between the profiled sleeve 101 and the profiled journal 102 and fixing the balls 103 in their axial position relative to one another, wherein the ball cage 104 is axially displaceable relative to the profiled sleeve 101 between two axial stops (see in Fig. 1, the element 114 and the unnumbered element between the elements 101 & 112); and a plurality of rolling members 105, 106 held in the ball cage 104 so as to be able to roll, and which are radially pretensioned (see "inward displacement" in col. 6, line 62) between the profiled sleeve 101 and the profiled journal 102 and which during the transmission torque, remain substantially free from circumferential forces.

10. Claims 1, 2, 4-6 & 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Merwin, US 2,562,729. Figs. 1 & 2 show a longitudinal displacement unit for a torque transmitting shaft assembly comprising: a profiled sleeve member 21 with circumferentially distributed longitudinally extending first ball grooves 31; a profiled journal 20 with circumferentially distributed longitudinally extending second ball grooves 30; torque-transmitting balls 28 which are arranged as groups in pairs of first and second ball grooves; a ball cage 26 positioned between the profiled sleeve 21 and the profiled journal 20 and fixing the balls 28 in their axial position relative to one another, wherein the ball cage 26 is axially displaceable relative to the profiled sleeve 21 between two axial stops (see Fig. 1); and a plurality of rolling members 25 held in the ball cage 26 so as to be able to roll and remain substantially free from circumferential forces. In operation the rolling members 25 are inherently radially pretensioned as is clearly shown in Matsubara, US 5,236,264 (see in Figs 1 & 2 how the rolling members 7 in

a displacement unit similar to that of Merwin are shown in operation to be inherently radially pretensioned 9).

Claim Rejections - 35 USC § 103

11. Claims 1, 2, 4-6, 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson in view of Jacob, US 6,217,456.

a. Claims 1, 2, 4-6, 15-17 Fig. 3 shows a longitudinal displacement unit for a torque transmitting shaft assembly comprising: a profiled sleeve member 18 with circumferentially distributed longitudinally extending first ball grooves; a profiled journal 17 with circumferentially distributed longitudinally extending second ball grooves; torque-transmitting balls 21, 22 which are arranged as groups in pairs of first and second ball grooves; a ball cage positioned between the profiled sleeve and the profiled journal and fixing the balls in their axial position relative to one another, wherein the ball cage is axially displaceable relative to the profiled sleeve; and a plurality of rolling members 19, 20 held in the ball cage so as to be able to roll and remain substantially free from circumferential forces. The rolling members 19, 20 are radially pretensioned (see page 2, lines 24 & 25 of the instant application). Andersson does not show axial stops. However, in Fig. 2, Jacob shows that it is well known to provide a displacement unit with axial stops in order to limit the axial displacement, and thus prevent disengagement, between the sleeve member and journal (see also col. 3, lines 46+). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the displacement unit of Andersson by including axial stops in order to limit the axial

displacement, and thus prevent disengagement, between the sleeve member and journal as taught by Jacob.

b. Claim 12. In col. 5, lines 9 & 10, Andersson discloses that the rolling members comprise an elastic material.

c. Claim 13. In col. 5, line 39, Andersson discloses that the ball cage 10' can be made from an elastic material.

d. Claims 18 & 19. Fig. 1 of Jacob shows a driveshaft where the displacement unit of the combination of Andersson and Jacob would be used with a first joint 1 and a second joint 2, one of which is a constant velocity joint.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703) 308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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